# TOWN OF STRATHAM

PRELIMINARY DRAWINGS FOR

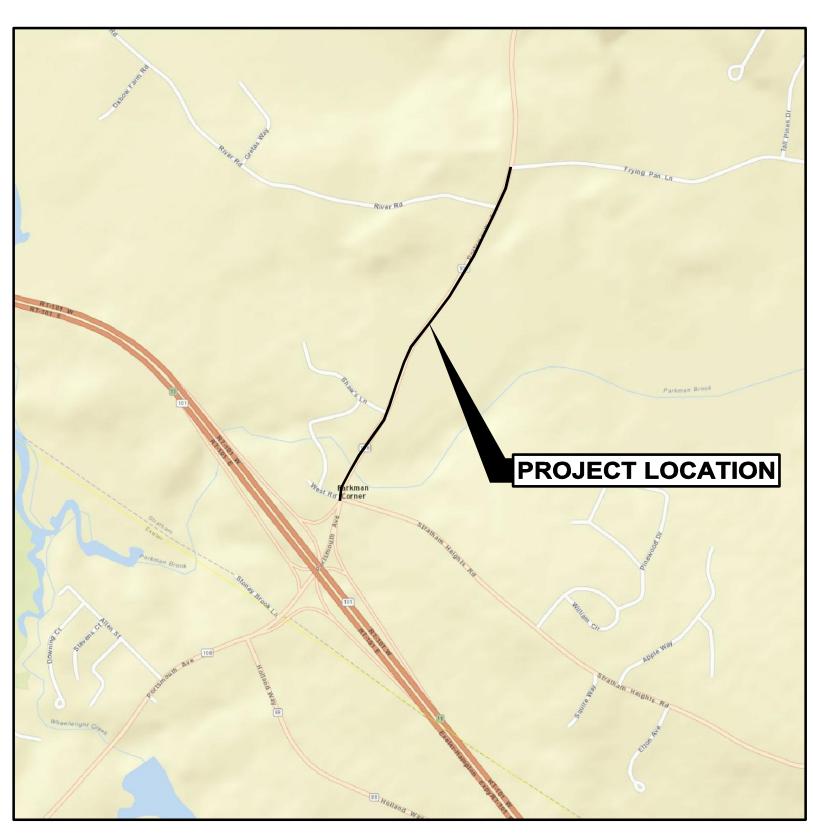
# PORTSMOUTH ROAD (NH ROUTE 108) WATER SYSTEM IMPROVEMENTS

STRATHAM, NH MAY 2016



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**LOCATION PLAN** 

# DRAFT - FOR REVIEW



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FOR REVIEW	-					
FOR BIDDING	_					
WP PROJECT No. 13327B						

#### **GENERAL NOTES**

- . THE CONTRACTOR IS REFERRED TO SECTION 01050 OF THE SPECIFICATIONS REGARDING COORDINATION WITH OTHERS, INCLUDING RESPONSIBILITIES AND RELATED COSTS.
- 2. BELOW GRADE UTILITY INFORMATION IS BASED ON INFORMATION PROVIDED BY EACH UTILITY. LOCATION OF PUBLIC UTILITIES SHOWN IS ONLY APPROXIMATE AND MAY NOT BE COMPLETE. PRIVATE UNDERGROUND UTILITIES SUCH AS, BUT NOT LIMITED TO, SEWER LINES, WATER LINES AND BURIED ELECTRICAL SERVICE ENTRANCES ARE NOT SHOWN. THE CONTRACTOR SHALL ASCERTAIN THE LOCATION AND SIZE OF EXISTING UTILITIES IN THE FIELD WITH THE RESPECTIVE UTILITY COMPANY REPRESENTATIVE PRIOR TO COMMENCING WORK. REFER TO SPECIFICATION SECTION 01050. ADDITIONAL TEST PITS, BEYOND THOSE SHOWN, MAY BE REQUIRED. UTILITY CONTACTS ARE AS FOLLOWS:

#### **ELECTRIC**:

**EVERSOURCE** 780 N COMMERCIAL ST MANCHESTER, NH 03101 TEL. (800) 662-7764

**TELEPHONE:** DIG SAFE:

FAIRPOINT COMMUNICATIONS 6 OLD PRESCOTT HILL ROAD BELMONT, NH 03222 TEL. (603) 433-2090 (MAIN) TEL. (603) 540-1616 (CELL) CONTACT: JENNIFER FOLEY

#### WATER/SEWER/STORM DRAIN:

TEL. 1-800-344-7233

UNITIL CORPORATION TOWN OF STRATHAM PUBLIC WORKS DEPARTMENT 325 WEST ROAD 70 BUNKER HILL ROAD PORTSMOUTH, NH 03801 TEL. (603) 294-5157 (MAIN) STRATHAM, NH 03885 TEL. (603) 772-5550 TEL. (603) 325-0252 (CELL) CONTACT: COLIN LAVERTY CONTACT: PHIL JOHNSON

**CABLE TELEVISION:** 

XXXXXXXXXXXXXXXXXX XXXXXXXXXXX TEL. (603) XXX-XXXX CONTACT: XXXXXXXXXXX

ADJUSTMENT OF WATER, SEWER, AND DRAINAGE, COVERS OR SIMILAR STRUCTURES TO MATCH THE NEW PAVEMENT GRADE AND THE RELOCATION OF UTILITY POLES WILL BE PERFORMED BY THE APPROPRIATE UTILITY OR ITS AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY IN EVERY WAY TO EXPEDITE SUCH ADJUSTMENTS. CONTRACTOR IS RESPONSIBLE TO IMPLEMENT AND SCHEDULE ALL CONTRACTORS INFRASTRUCTURE WORK

- 2. THE LOCATION AND LIMITS OF ALL ON SITE WORK AND STORAGE AREAS SHALL BE REVIEWED/COORDINATED WITH, AND ACCEPTABLE TO THE OWNER AND ENGINEER.
- 3. ALL STRUCTURES AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATION SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES CAUSED BY, OR RESULTING FROM, THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL UTILITIES REQUIRING REPAIR. RELOCATION OR ADJUSTMENT AS A RESULT OF THE PROJECT SHALL BE COORDINATED THROUGH THE RESPECTIVE UTILITY.
- 4. IN THOSE INSTANCES WHERE POWER OR TELEPHONE POLE SUPPORT IS REQUIRED, THE CONTRACTOR SHALL PROVIDE A MINIMUM 48-HOUR NOTIFICATION TO PUBLIC SERVICE OF NEW HAMPSHIRE OR FAIRPOINT, RESPECTIVELY. NO ADDITIONAL PAYMENT WILL BE PROVIDED FOR TEMPORARY BRACING OF UTILITIES.
- 5. DO NOT SCALE DRAWINGS UNLESS OTHERWISE NOTED. WRITTEN DIMENSIONS AND STATIONING SHALL PREVAIL.
- 6. CONTRACTOR SHALL INSTALL AND MAINTAIN TRAFFIC CONTROL DEVICES AS NECESSARY AND IN A MANNER CONSISTENT WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), N.H.D.O.T. STANDARDS, OR AS REQUIRED BY
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TRAFFIC FLOW AT ALL TIMES. THE CONTRACTOR IS REQUIRED TO SUBMIT A TRAFFIC CONTROL PLAN TO THE OWNER PRIOR TO COMMENCING CONSTRUCTION. THE STRATHAM POLICE DEPARTMENT (603-778-9691) AND FIRE DEPARTMENT (603-772-8215) ARE TO BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF ANY STREET CLOSING OR DETOUR. REFER TO SPEC. SECTION 01570.
- THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY RIGHTS OF WAY AND EASEMENTS. THE CONTRACTOR SHALL VERIFY THAT THE NECESSARY EASEMENTS HAVE BEEN SECURED BY THE OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE FAMILIAR WITH THE APPLICABLE PROVISIONS OF EACH EASEMENT AS THEY APPLY TO THE WORK PRIOR TO BIDDING AND ABIDE BY THOSE PROVISIONS DURING CONSTRUCTION. COPIES OF ANY SUCH RIGHTS-OF-WAY AND EASEMENTS ARE AVAILABLE FOR REVIEW FROM THE CITY OF ROCHESTER.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREVENTION OF EROSION. ALL DISTURBED EARTH SURFACES ARE TO BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL IS TO BE IN A MANNER THAT WILL MINIMIZE EROSION. MATERIALS AND METHODS USED FOR TEMPORARY EROSION CONTROL SHALL BE AS SPECIFIED BY THE "NEW HAMPSHIRE STORMWATER MANUAL" PREPARED BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, REFER TO SPECIFICATION SECTION 02270
- 10. COMPACTION TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02200. ANY SETTLEMENT OCCURRING WITHIN ONE YEAR OF SUBSTANTIAL COMPLETION OF THE PROJECT WILL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- 11. OPEN TRENCHES IN THE ROADWAY MUST BE BACKFILLED AT THE END OF THE WORKDAY, UNLESS PERMISSION IS GIVEN IN WRITING BY THE OWNER.
- 12. CONTRACTOR SHALL CONTROL DUST TO A TOLERABLE LIMIT AS OUTLINED IN SPECIFICATION SECTION 01562. CONTRACTOR SHALL NOT TRACK OR SPILL EARTH AND DEBRIS ON PUBLIC STREETS OUTSIDE THE PROJECT AREA. STREETS OPENED TO THE PUBLIC SHALL BE KEPT SWEPT AND FREE OF DEBRIS EACH DAY AT THE BEGINNING AND END OF WORK DAY. CROSS STREETS THAT BOUND THE PROJECT AREA WILL BE SWEPT AT LEAST ONCE EACH WEEK OR AS DIRECTED BY THE ENGINEER.
- 13. ALL AREAS (EXCEPT GRAVEL DRIVEWAYS) THAT ARE EXCAVATED, FILLED OR OTHERWISE DISTURBED BY THE CONTRACTOR AND ARE NOT TO BE PAVED OR FILLED WITH RIPRAP. SHALL BE LOAMED, GRADED, LIMED, FERTILIZED, SEEDED AND
- 14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESETTING ALL EXISTING PROPERTY MONUMENTATION THAT IS DISTURBED BY HIS OPERATIONS AT NO EXPENSE TO THE OWNER. THIS WORK IS TO BE DONE BY A LAND SURVEYOR REGISTERED IN THE STATE OF NEW HAMPSHIRE.
- 15. THE CONTRACTOR SHALL NOT HAVE ANY RIGHT OF PROPERTY IN ANY MATERIALS TAKEN FROM ANY EXCAVATION. SUITABLE EXCAVATED MATERIAL MAY BE INCORPORATED IN THE PROJECT. THE DIRECTOR OF THE STRATHAM HIGHWAY DEPARTMENT SHALL HAVE FIRST REFUSAL TO ALL EXCESS SOIL MATERIAL. EXCESS MATERIALS ACCEPTED BY THE OWNER SHALL BE DELIVERED BY THE CONTRACTOR TO THE STRATHAM HIGHWAY DEPARTMENT FACILITY ON 70 BUNKER HILL AVENUE. THE CONTRACTOR SHALL DISPOSE OF ALL UNSUITABLE AND EXCESS MATERIAL NOT ACCEPTED FOR REUSE BY THE OWNER IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS AND ALL STATE, FEDERAL AND LOCAL REGULATIONS.
- 16. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
- 17. SUITABLE EXCAVATED MATERIAL SHALL BE INCORPORATED IN THE PROJECT. EXCESS MATERIAL SHALL BE DISPOSED OF AT A LOCATION PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE AND EXCESS MATERIAL IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS AND ALL STATE, FEDERAL AND LOCAL REGULATIONS. SUITABLE MATERIAL WITH EXCESSIVE MOISTURE SHALL BE STOCKPILED AND MANAGED TO ALLOW DRYING BEFORE FUTURE USE ON PROJECT.
- 18. CONTRACTOR SHALL RETURN ALL CASTINGS TO THE TOWN OF STRATHAM. CASTINGS SHALL BE TRANSPORTED TO THE TOWN OF STRATHAM HIGHWAY DEPARTMENT OR SEPARATE STOCKPILE LOCATION. COORDINATE WITH THE TOWN.
- 19. THE ENGINEER WILL PROVIDE CONTRACTOR WITH HORIZONTAL CONTROL POINTS TO ASSIST CONTRACTOR IN LAYING OUT THE CONSTRUCTION BASELINE. THE CONTRACTOR SHALL ESTABLISH HORIZONTAL AND VERTICAL ROADWAY LAYOUT CONTROL POINTS BEYOND THE LIMITS OF ROADWAY WORK AND PROTECT THESE POINTS FOR THE DURATION OF THE PROJECT. LAYOUT OF ALL CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 20. THE CONTRACTOR IS TO TAKE SPECIAL CARE NOT TO DAMAGE TREES WITHIN THE CONSTRUCTION AREA UNLESS THEY ARE NOTED TO BE REMOVED.

#### **GENERAL NOTES CONT**

- 22. LIMITS OF WORK IN EXISTING DRIVES AS SHOWN ON THE PLANS ARE APPROXIMATE. ACTUAL LIMITS OF WORK ARE TO BE DETERMINED IN THE FIELD BASED ON THESE DRAWINGS AND AS APPROVED BY THE ENGINEER.
- 23. PAVEMENT IS TO BE SAWCUT AT ALL SIDE ROADS. PAVED DRIVES. PAVED SIDEWALKS. AS WELL AS THE BEGINNING AND END OF THE PROJECT.
- 24. SAWCUT LINES FOR PAVED DRIVEWAY MATCHES ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY SAWCUT LOCATION FOR DRIVEWAY MATCHES WITH THE ENGINEER.
- 25. EXISTING SIGNS IMPACTED BY THIS PROJECT SHALL BE RESET AT NO ADDITIONAL COST TO THE OWNER. PLACEMENT SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD.
- 26. RARE PLANT SPECIES HAVE BEEN LOCATED IN THE AREA. THE CONTRACTOR IS TO HAVE ALL STAGING AREAS SURVEYED FOR VARIABLE SEDGE BY WETLAND SCIENTIST PRIOR TO MOBILIZATION AND DISTURBANCE, IF VARIABLE SEDGE IS DETECTED, CONTRACTOR IS TO TAKE PREVENT ACCESS TO AND PROTECT PLANT POPULATION FROM DISTURBANCE AS RECOMMENDED BY WETLAND SCIENTIST.

#### **SURVEY NOTES**

- 1. EXISTING CONDITION INFORMATION, RIGHT-OF-WAY LINES, AND WETLAND INFORMATION IS BASED ON A COMBINATION OF GROUND SURVEY CONDUCTED BY DOUCET SURVEY INC., (DOUCET) OF NEWMARKET, NEW HAMPSHIRE, ADDITIONAL TOPO INFORMATION WAS OBTAINED FROM LIDAR DATA DOWNLOADED FROM THE NEW HAMPSHIRE GRANITE ONLINE GIS DATABASE.
- 2. HORIZONTAL DATUM IS BASED ON NEW HAMPSHIRE STATE PLANE(2800) NAD83(2011) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK. VERTICAL DATUM IS BASED ON NAVD88 BASED ON NHDOT DISK 431-0200 (NGVD29 ELEVATION=77.65', NAVD88=76.89')

#### **GRAPHIC SCALE NOTE**

EACH PLAN AND SECTION VIEW IS PROVIDED WITH A GRAPHIC BAR SCALE SIMILAR TO THAT INDICATED HEREIN. - 40' -IF THE BAR SCALE IS NOT PRESENT ON ANY PLAN OR SECTION THE CONTRACTOR SHALL NOTIFY THE ENGINEER. DRAWING SCALES ARE PROVIDED FOR THE CONTRACTORS USE, HOWEVER, ALL SPECIFICALLY INDICATED DIMENSIONS TAKE PRECEDENCE OVER THIS GRAPHIC SCALE.

#### **LEGEND EXISTING PROPOSED** SETBACK LINE EASEMENT LINE CENTERLINE EDGE OF PAVEMENT CURBING EDGE OF GRAVEL EDGE OF CONCRETE ---122---CONTOUR BUILDING **STONEWALL** 000000000 $\sim\sim\sim\sim$ TREELINE CHAIN LINK FENCE STOCKADE FENCE BARB WIRE FENCE RETAINING WALL **GUARDRAIL** SEWER — 4"FM— — SEWER FORCE MAIN GAS WATER 15"SD STORM DRAIN UNDERDRAIN \_ = <u>12" CMP</u> = = = <u> = 12" CMP</u> = : CULVERT OVERHEAD ELECTRIC ——OHE—— IRON PIPE/REBAR DRILLHOLE **MONUMENT** SURVEY CONTROL POINT 124.6 SPOT ELEVATION ●SMH SEWER MANHOLE DMH DRAINAGE MANHOLE CATCH BASIN ●CB ■CB ☐ EMH **ELECTRIC MANHOLE** TELEPHONE MANHOLE GATE VALVE CURB STOP YARD HYDRANT **HYDRANT** UTILITY POLE UTILITY POLE W/ GUY UTILITY POLE W/ LIGHT LIGHT POLE BOLLARD FLAGPOLE CONIFEROUS TREE DECIDUOUS TREE SHRUB EDGE OF WATER STREAM ----- EDGE OF WETLANDS FLOODPLAIN WETLANDS DRAINAGE FLOW PAVEMENT MARKINGS SIGN **MAILBOX** TEMPORARY BENCH MARK TEST BORING TEST PROBE LIMIT OF WORK SILT FENCE RIPRAP MATCHLINE ROCK OUTCROP — 4"FM— — SEWER FORCE MAIN GAS WATER 8"W STORM DRAIN UNDERDRAIN CULVERT $---\frac{6"\chi\chi}{}---$ CULVERT/UNDERDRAIN 6"XX (AB) PIPE PREVIOUSLY ABANDONED ----PIPING TO BE DEMOLISHED \_..\_.6"XX \_... PIPING TO ABANDON

### **ABBREVIATIONS**

Α	AIR
CB	CATCH BASIN
CI	CAST IRON PIPE
DEW	DEWATERING
DI	DUCTILE IRON PIPE
DR	DRAIN
FM	FORCE MAIN
GS	GALVANIZED STEEL PIPE
HYD	HYDRANT
INV	INVERT ELEVATION
OHE	OVERHEAD ELECTRICAL
OUT	OUTFALL
P.C.	POINT OF CURVATURE
PE	POLYETHYLENE PIPE
PVC	POLYVINYL CHLORIDE P
RCP	REINFORCED CONCRETE
S	SEWER
SD	STORM DRAIN
SMH	SEWER MANHOLE
SS	STAINLESS STEEL PIPE
UD	UNDERDRAIN

UNDERGROUND ELECTRIC

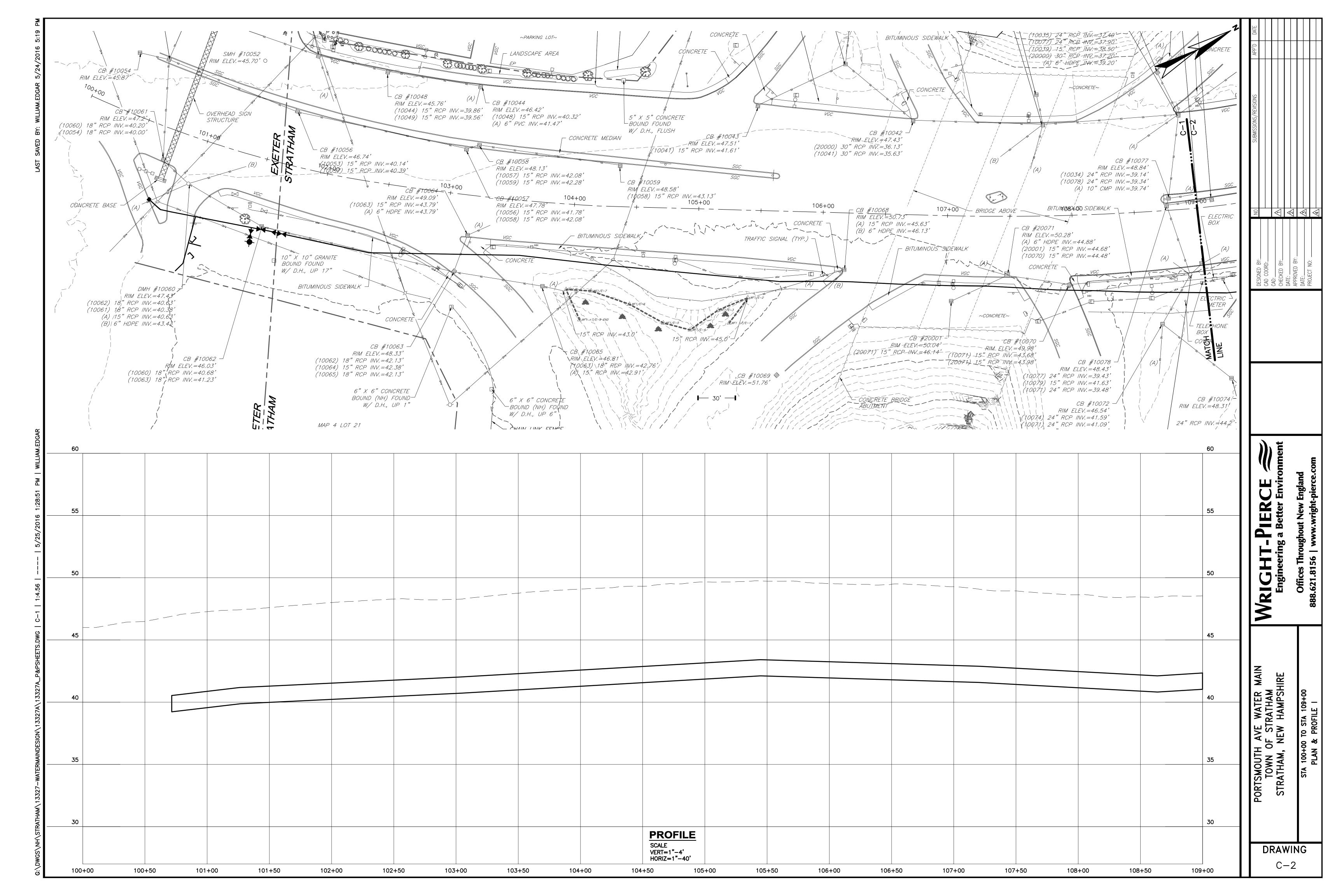
VITRIFIED CLAY WATER

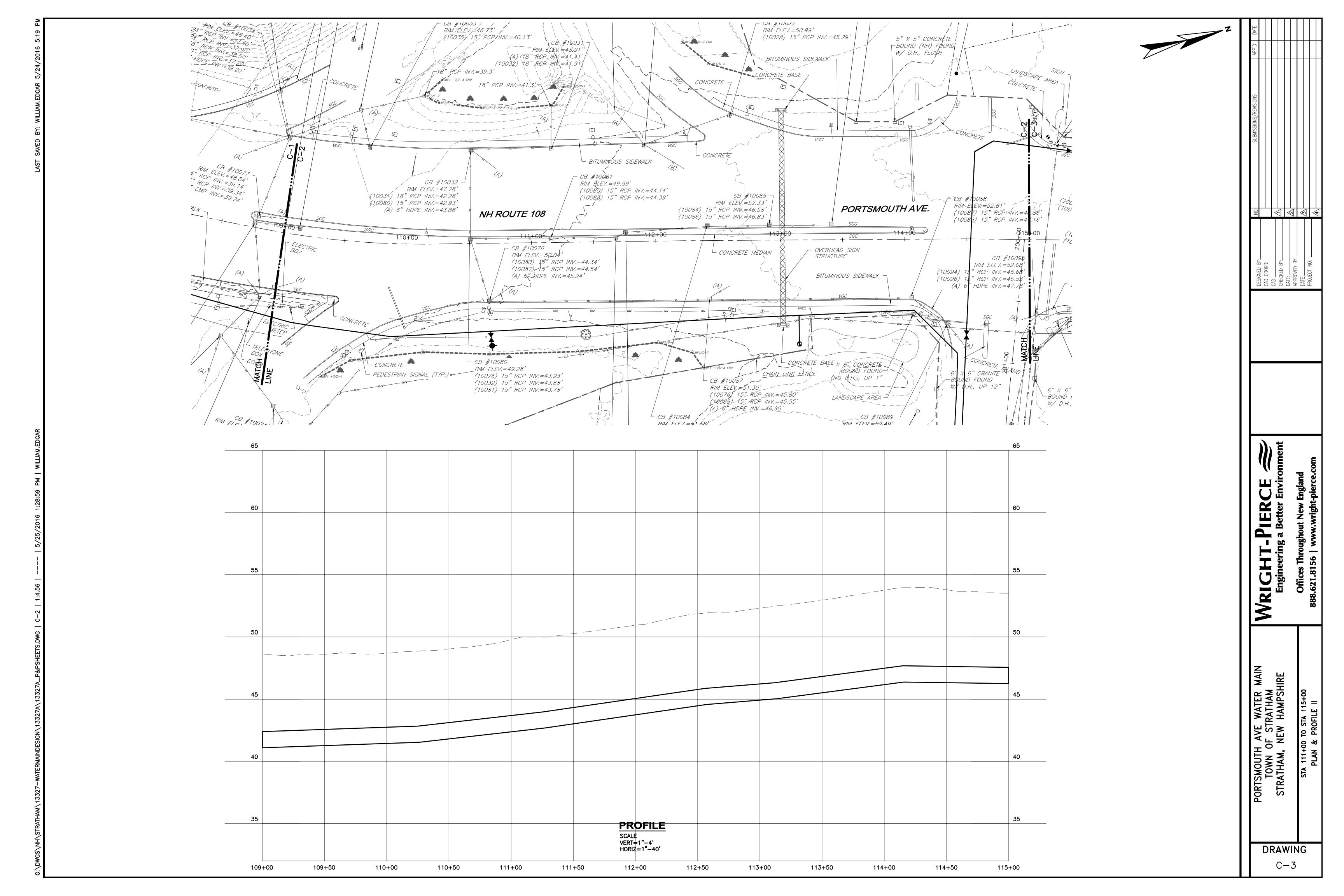
TRANSFORMER

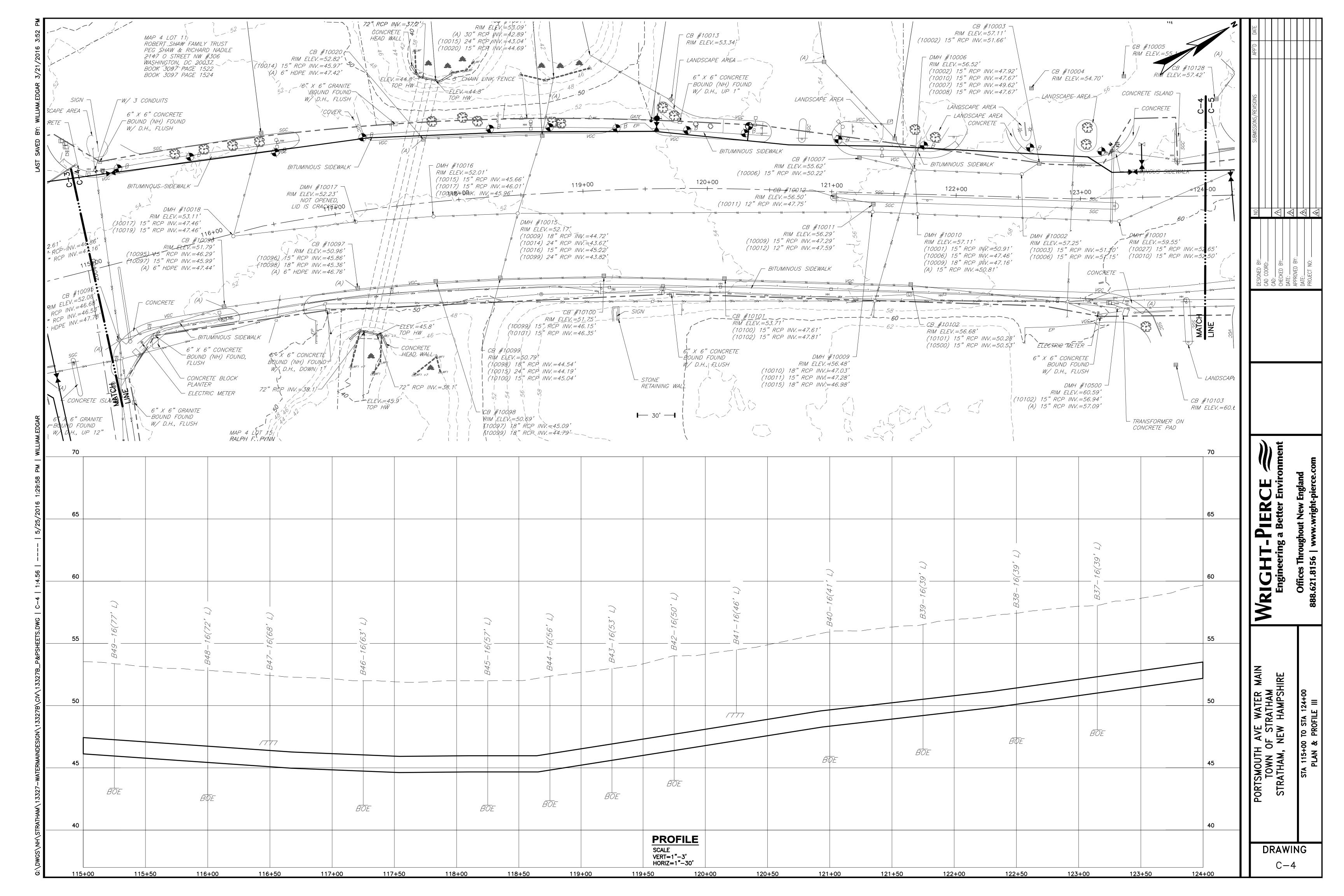
UGE

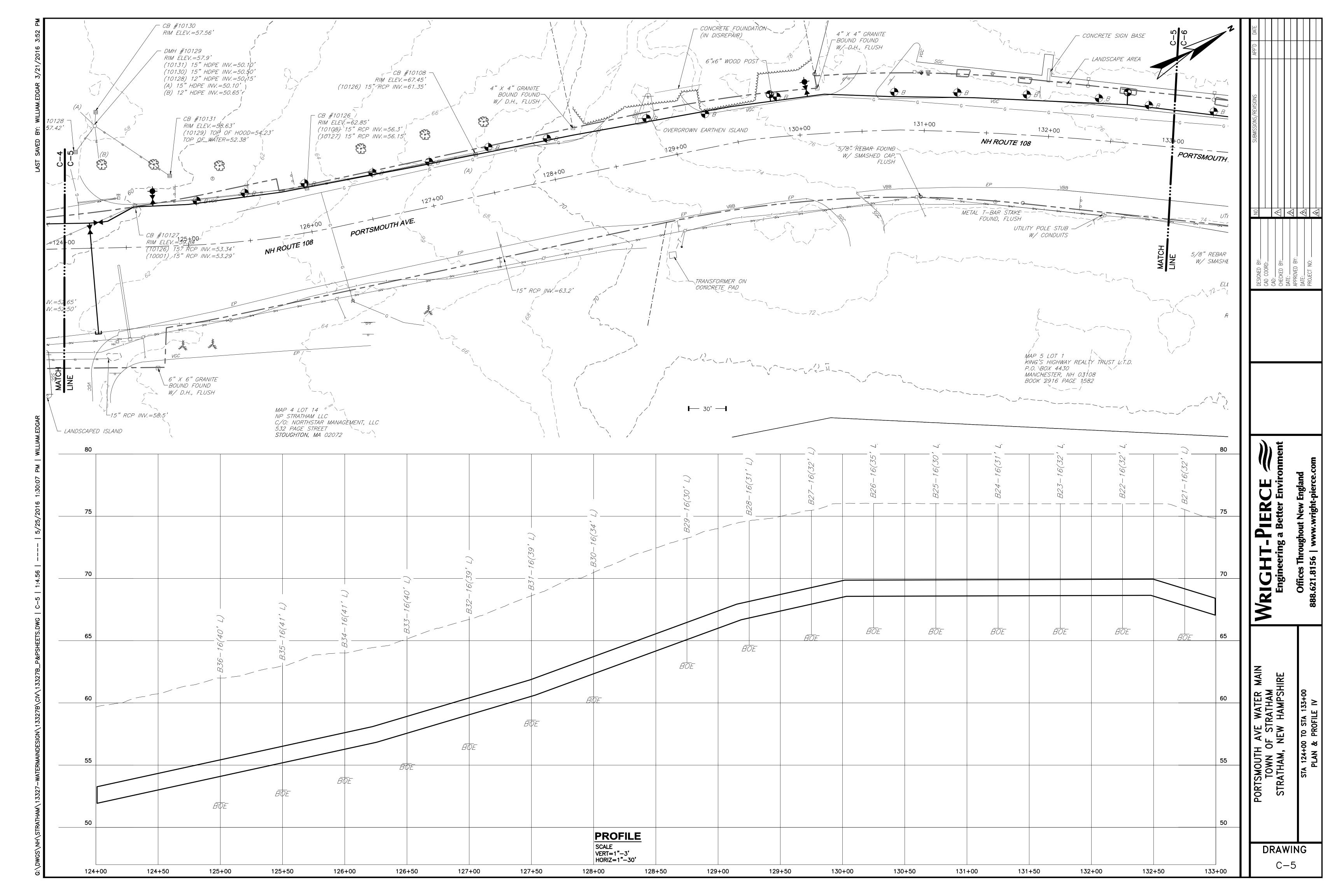
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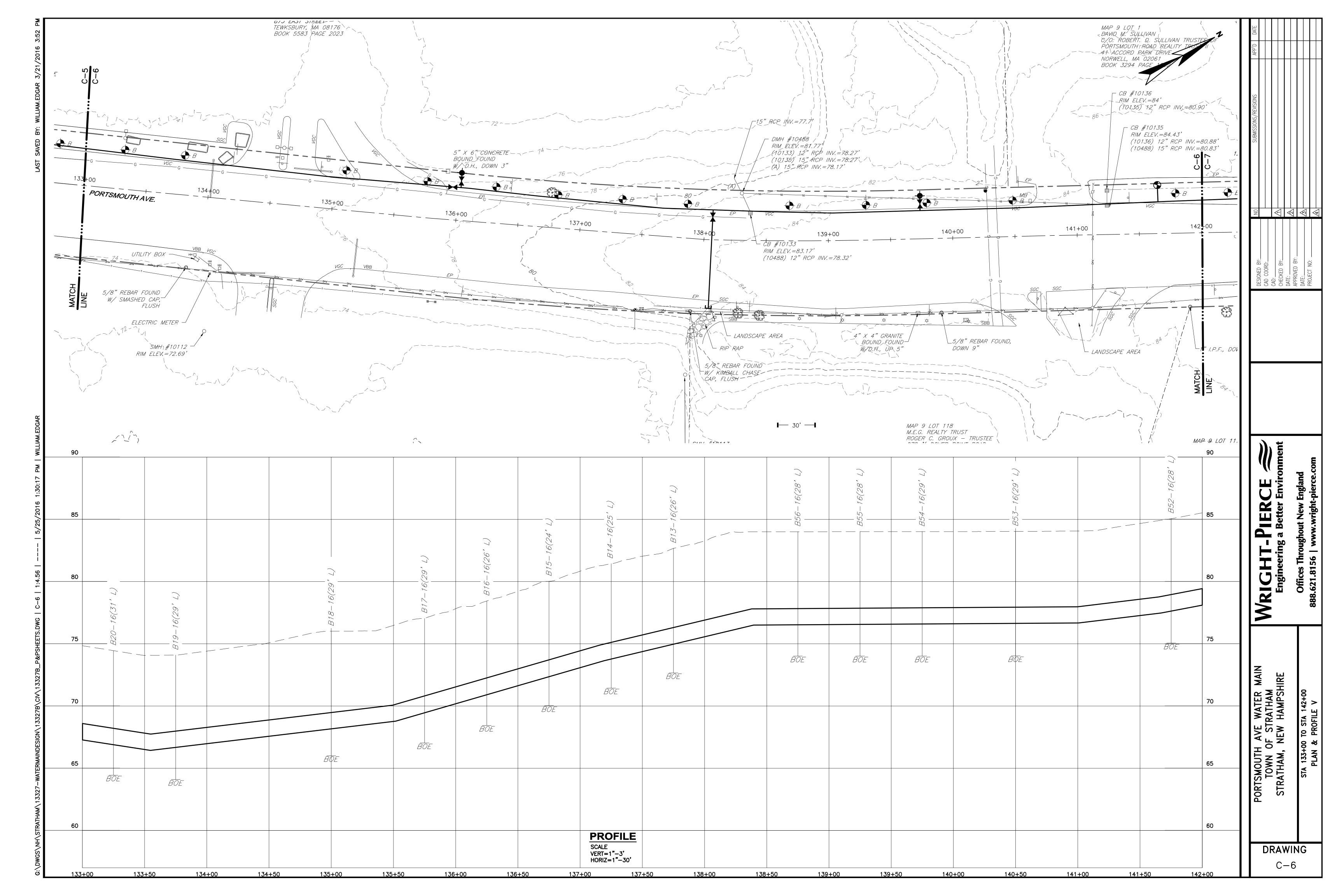
DRAWING

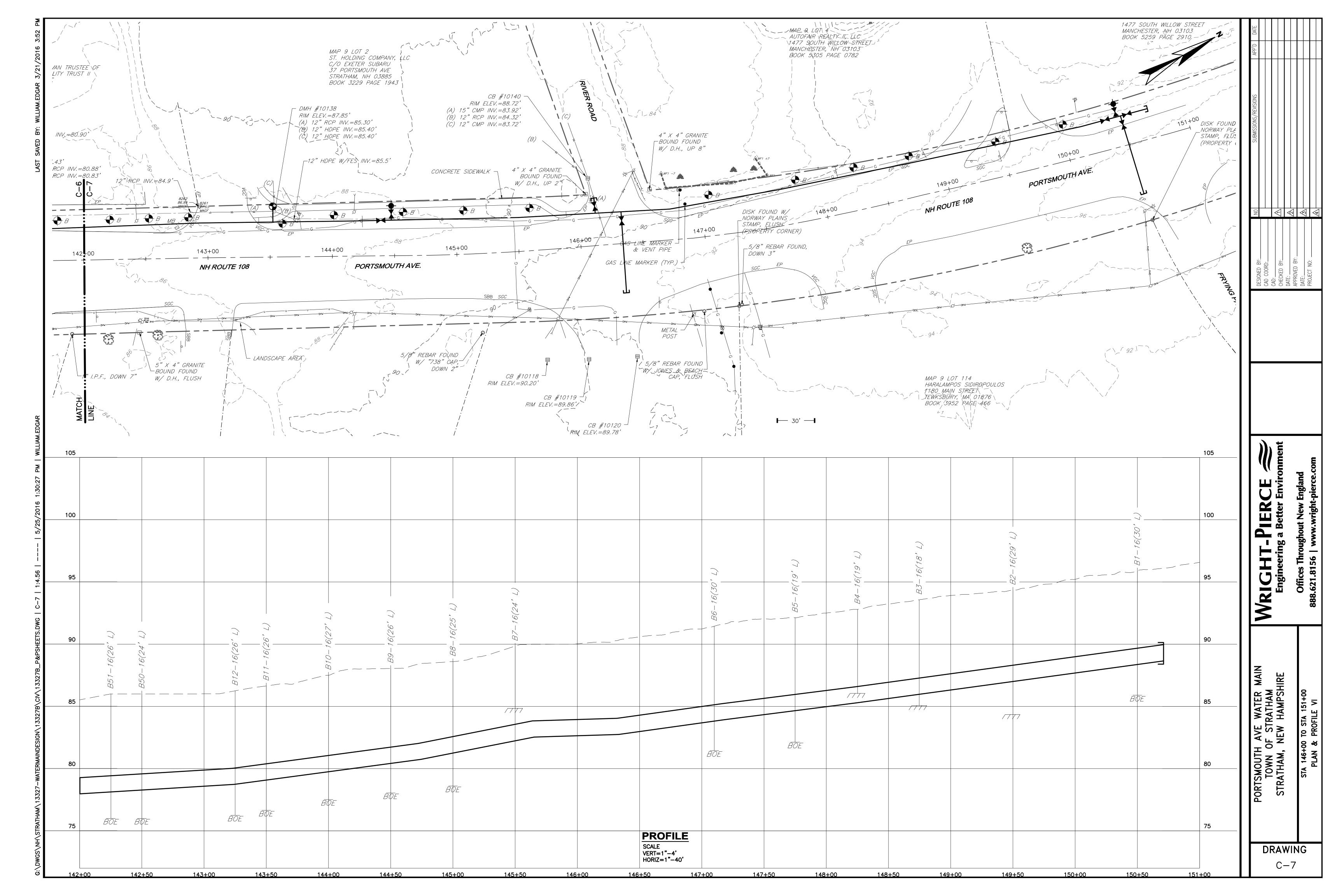












200+00

200+50

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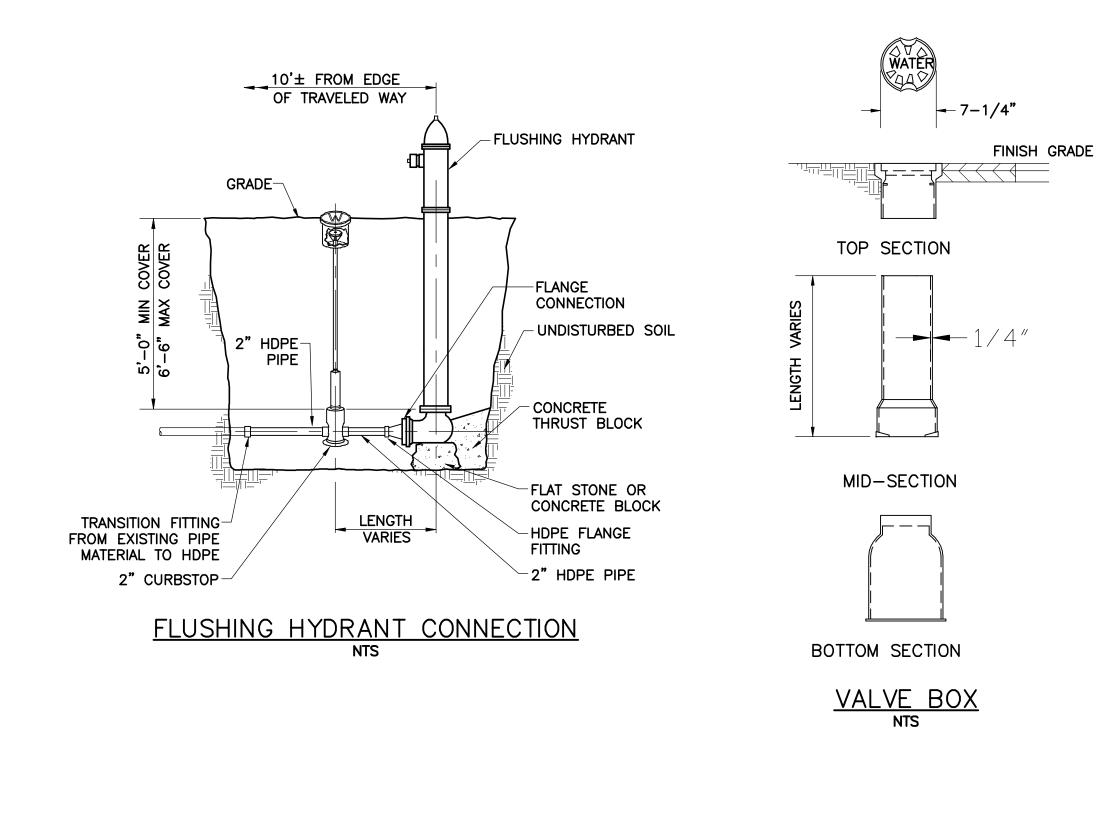
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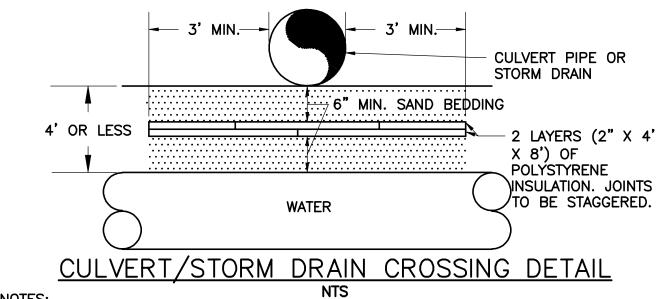
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DRAWING

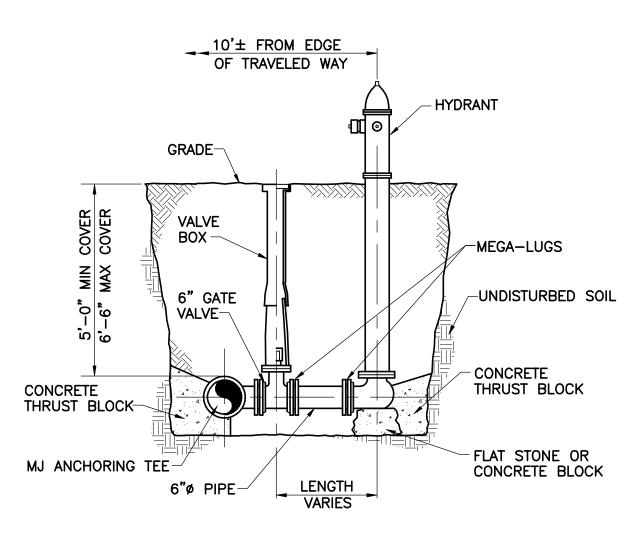
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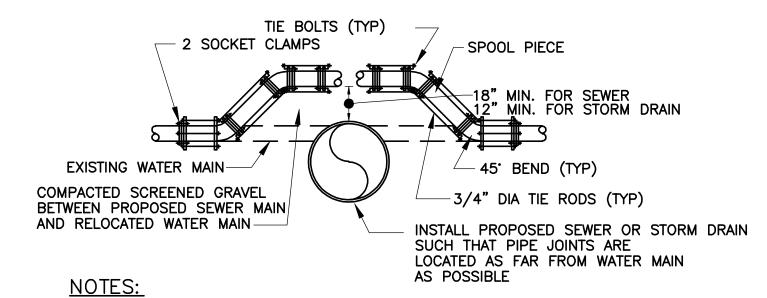


#### NOTES:

- 1. WATER MAINS OR SERVICES WITHIN 4 FEET HORIZONTALLY OR VERTICALLY OF ANY CULVERT OR STORM DRAIN PIPE SHALL HAVE INSULATION.
- 2. THICKNESS OF INSULATION SHALL BE 4" WHERE SEPARATION OF WATER MAINS OR SERVICES FROM CULVERTS OR STORM DRAIN PIPE IS 18" OR LESS.

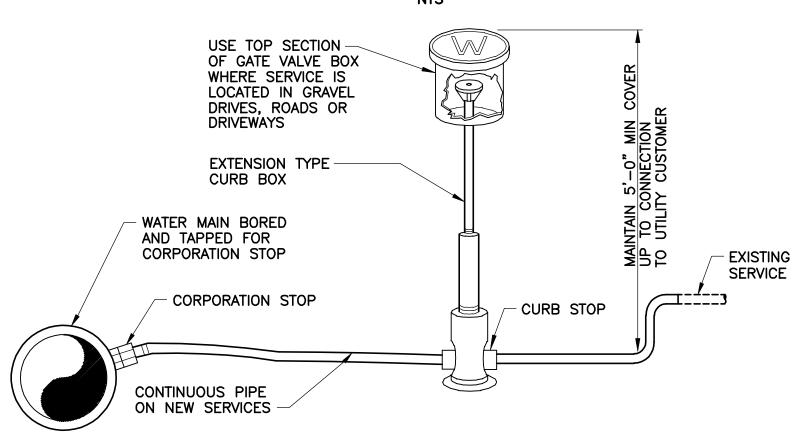


HYDRANT CONNECTION



- 1. WATER MAIN MATERIALS TO BE CLASS 52 DUCTILE IRON. JOINT RESTRAINT TO BE BY MECHANICAL JOINT WITH MEGA-LUGS OR WITH TIE BOLTS AS SHOWN. ALL PUSH-ON JOINTS SHALL BE RESTRAINED WITH ROD CLAMPS AND TIE BOLTS.
- 2. TIE RODS, TIE BOLTS, SOCKET CLAMPS AND BRIDLES SHALL BE COATED WITH A BITUMINOUS PAINT AFTER ASSEMBLY OR IF NECESSARY PRIOR TO ASSEMBLY.
- 3. TIE RODS: 10" DIA WATER MAIN OR LARGER 4 REQUIRED. 8" DIA WATER MAIN OR SMALLER 2 REQUIRED.
- 4. EXISTING WATER MAINS TO BE RELOCATED OVER NEW SEWERS WHEREVER SUFFICIENT GROUND COVER EXISTS (6' MINIMUM COVER).
- 5. WATER MAINS OR SERVICES WITHIN 5 FEET HORIZONTALLY OR 4 FEET VERTICALLY OF ANY CULVERT OR STORM DRAIN PIPE SHALL HAVE INSULATION, SEE CULVERT/STORM DRAIN CROSSING DETAIL

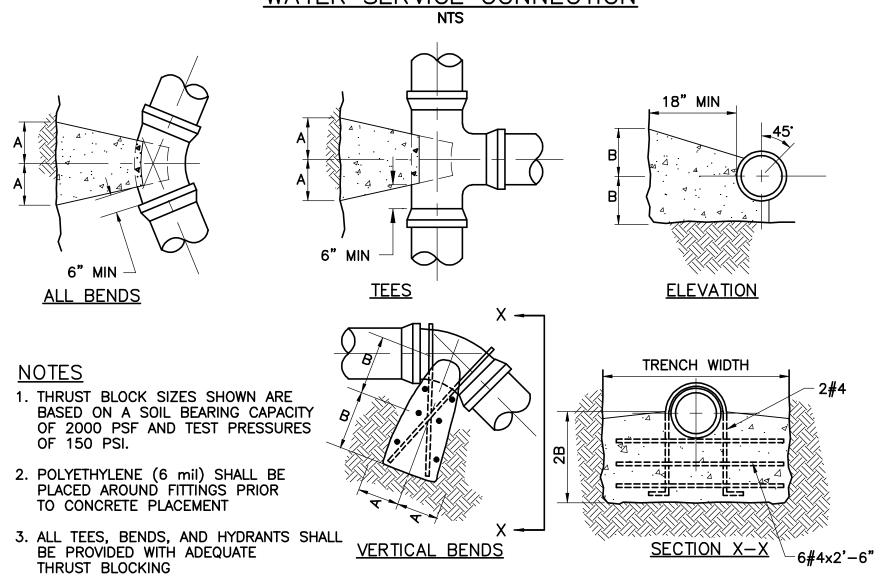
## WATER MAIN RELOCATION DETAIL



#### NOTES:

- 1. WATER SERVICE CONNECTIONS TO BE 1" DIAMETER UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- WATER MAINS OR SERVICES WITHIN 5 FEET HORIZONTALLY OR 4 FEET VERTICALLY OF ANY CULVERT OR STORM DRAIN PIPE SHALL HAVE INSULATION, SEE CULVERT/STORM DRAIN CROSSING DETAIL
- 3. WATER SERVICES LARGER THAN 1" SHALL HAVE CORPORATIONS TAPPED THROUGH A SERVICE SADDLE.

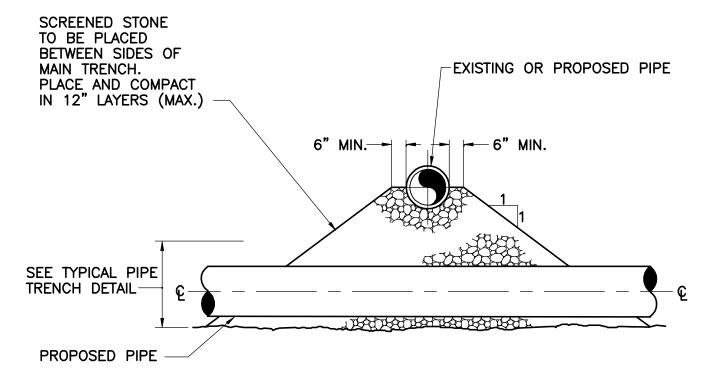
#### WATER SERVICE CONNECTION



4. MEGA-LUGS WILL ALSO BE REQUIRED

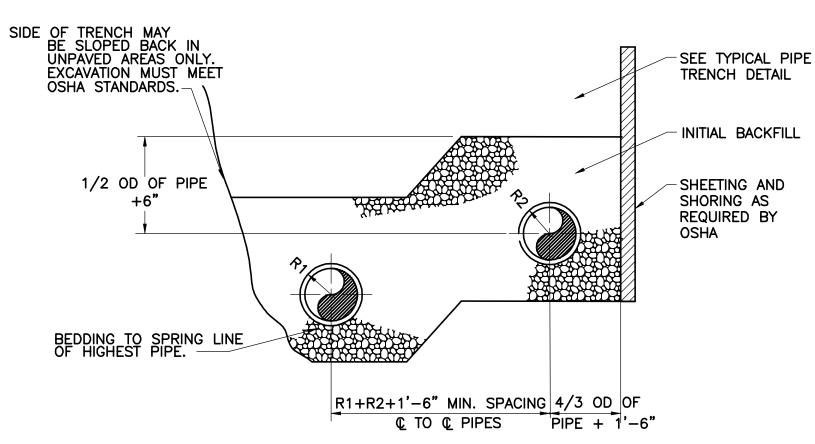
PIPE SIZE .	90' BEND 45'		<b>45</b> °	BEND 22 1/2°		BEND	11 1/4 BEND		TEE		VERT BEND	
	Α	В	Α	В	Α	В	Α	В	Α	В	Α	В
6"	18"	12"	12"	9"	9"	9"	9"	9"	9"	9"	"	29
8"	24"	15"	15"	12"	12"	12"	12"	12"	18"	15"	"	29
10"	24"	24"	18"	18"	12"	12"	12"	12"	24"	24"	"	27
12"	24"	24"	18"	18"	15"	12"	12"	12"	24"	24"	"	27

THRUST BLOCK DETAIL



NOTE:
1. JOINTS ON EACH PIPE TO BE AS FAR FROM INTERSECTION AS POSSIBLE.
2. 18" MINIMUM SEPARATION FOR WATER & SEWER CROSSINGS.

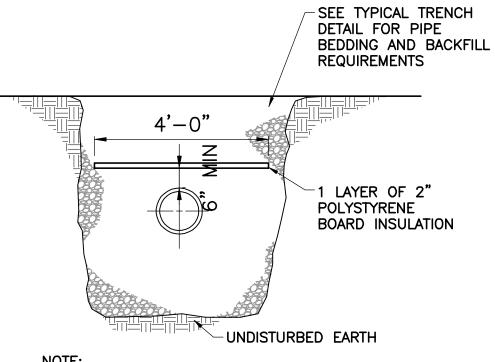
PIPE CROSSING DETAIL



NOTES: 1. THIS SECTION IS SHOWN FOR TWO PIPES. IT IS TO BE USED FOR ANY NUMBER OF PIPES.

- 2. SEE SPECIFICATIONS FOR BEDDING AND BACKFILL MATERIALS AND COMPACTED BACKFILL REQUIREMENTS.
- 3. PIPE SPACING SHOWN IS TYPICAL UNLESS OTHERWISE INDICATED.

MULTIPLE PIPE TRENCH SECTION NTS



NOTE:
TRENCH PIPE INSULATION TO BE USED WHERE
DEPTH OF COVER IS LESS THAN \*\* FEET OR AS
DIRECTED BY THE ENGINEER

TRENCH PIPE INSULATION

PORTSMOUTH AVE WATER MAIN TOWN OF STRATHAM STRATHAM, NEW HAMPSHIRE

DRAWING

C-9

#### EROSION AND SEDIMENTATION CONTROL NOTES

THIS PLAN HAS BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE NEW HAMPSHIRE STORMWATER MANUAL BY THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, TERRAIN ALTERATION BUREAU, DATED DECEMBER 2008

THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL STRUCTURES REQUIRED ARE SHOWN ON THE DRAWINGS. PROVIDE SILT FENCE, STONE CHECK DAMS AND OTHER EROSION CONTROL MEASURES AS REQUIRED TO ADEQUATELY PREVENT SEDIMENT TRANSPORT AS NOTED

- ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE IN ACCORDANCE WITH THE NEW HAMPSHIRE STORMWATER MANAGEMENT MANUAL AND THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES, ENV-Wg 1500: ALTERATION OF TERRAIN, DECEMBER 2008
- THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE MAINTAINED IN AN UNTREATED OR UNVEGETATED CONDITION FOR THE MINIMUM TIME REQUIRED. IN GENERAL AREAS TO BE VEGETATED SHALL BE PERMANENTLY STABILIZED WITHIN 15 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL.
- SEDIMENT BARRIERS (SILT FENCE, STONE CHECK DAMS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF UPGRADIENT DRAINAGE AREAS.
- 4. INSTALL SILT FENCE AT TOE OF SLOPES TO FILTER SILT FROM RUNOFF. SEE SILT FENCE DETAIL FOR PROPER INSTALLATION. SILT FENCE WILL REMAIN IN PLACE PER NOTE #5.
- 5. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSURE. SEDIMENT DEPOSITS MUST BE REMOVED WHEN THEY REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED.
- 6. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2 TO 1) UNLESS STABILIZED WITH RIPRAP OR OTHER STRUCTURAL MEANS.
- 7. IF FINAL SEEDING AND SODDING IS NOT EXPECTED PRIOR TO THE ANTICIPATED DATE OF THE FIRST KILLING FROST. USE TEMPORARY ANNUAL RYEGRASS SEEDING AND MULCHING ON ROUGH GRADED SUBSOIL TO PROTECT THE SITE AND DELAY PERMANENT LOAMING, FINE GRADING, AND SEEDING OR SODDING UNTIL SPRING.
- 8. WHEN FEASIBLE, TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINISH GRADED SHALL BE COMPLETED 30 DAYS PRIOR TO THE FIRST KILLING FROST.
- 9. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO THE SITE AND REGRADED ONTO OPEN AREAS. POST SEEDING SEDIMENT, IF ANY, WILL BE DISPOSED OF IN AN ACCEPTABLE MANNER.
- 10. REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND REVEGETATED.
- 11. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS
- 12. STABILIZATION SCHEDULE BEFORE WINTER:

SEPTEMBER 15 ALL DISTURBED AREAS MUST BE SEEDED AND MULCHED. ALL SLOPES MUST BE STABILIZED, SEEDED AND MULCHED.

SLOPES 3:1 OR GREATER TO BE STABILIZED WITH EROSION CONTROL MATTING AND SEEDED. ALL DISTURBED AREAS TO BE PROTECTED WITH AN ANNUAL GRASS MUST BE SEEDED AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET AND MULCHED.

OCTOBER 1 ALL GRASS-LINED DITCHES AND CHANNELS MUST BE STABILIZED WITH MULCH OR EROSION CONTROL BLANKET.

NOVEMBER 15 ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED.

SLOPES THAT ARE COVERED WITH RIPRAP MUST BE CONSTRUCTED BY THAT DATE. ALL DISTURBED AREAS WHERE THE GROWTH OF VEGETATION FAILS TO BE AT LEAST

THREE INCHES TALL OR AT LEAST 75% OF THE DISTURBED SOIL IS COVERED BY

#### EROSION CONTROL - WINTER CONSTRUCTION

- 1. WINTER CONSTRUCTION PERIOD DEFINED: NOVEMBER 1 THROUGH APRIL 15
- 2. WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.

VEGETATION, MUST BE PROTECTED FOR OVER-WINTER.

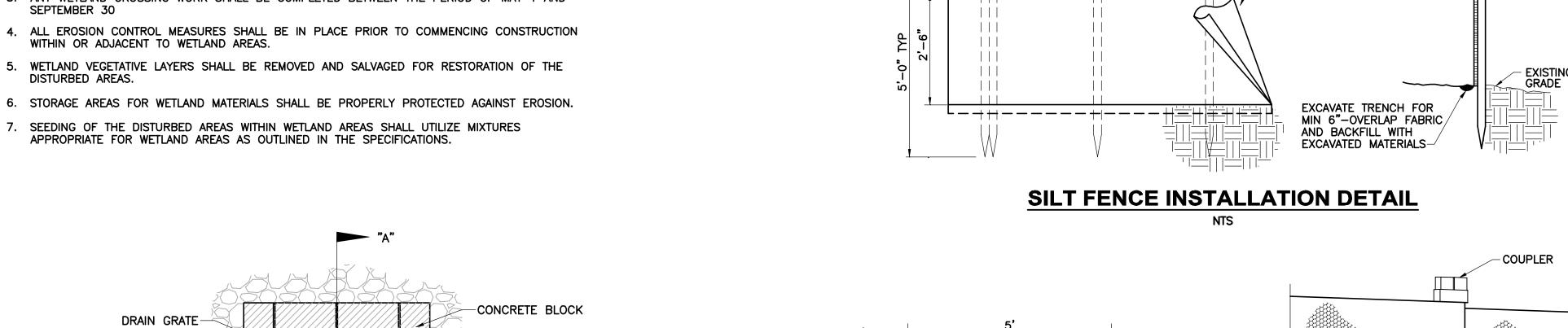
- 3. EXPOSED AREA SHOULD BE LIMITED SUCH THAT THE AREA CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT.
- 4. CONTINUATION OF EARTHWORK OPERATIONS ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
- AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW AT A RATE OF 100 LB. PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE. IN ALL CASES, MULCH SHALL BE APPLIED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH.
- 6. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE-FREEZING TEMPERATURES, THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOAMED. FINAL GRADED AND IS SMOOTH, THEN THE AREA MUST BE STABILIZED WITH MULCH. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT EXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
- 7. THE APPLICATION OF MULCH TO FINE GRADED AREAS WILL BE STABILIZED AS FOLLOWS:
- A) BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING, ASPHALT EMULSION, CHEMICAL TACK OR WOOD CELLULOSE FIBER.
- B) MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GRATER THAN 8%.
- C) MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1ST, THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
- 8. AFTER NOVEMBER 1ST THE CONTRACTOR SHALL APPLY MULCH AND ANCHORING ON ALL BARE EARTH AT THE END OF EACH WORKING DAY.
- 9. DURING WINTER CONSTRUCTION PERIODS ALL SNOW SHALL BE REMOVED FROM AREAS OF MULCHING PRIOR TO PLACEMENT.

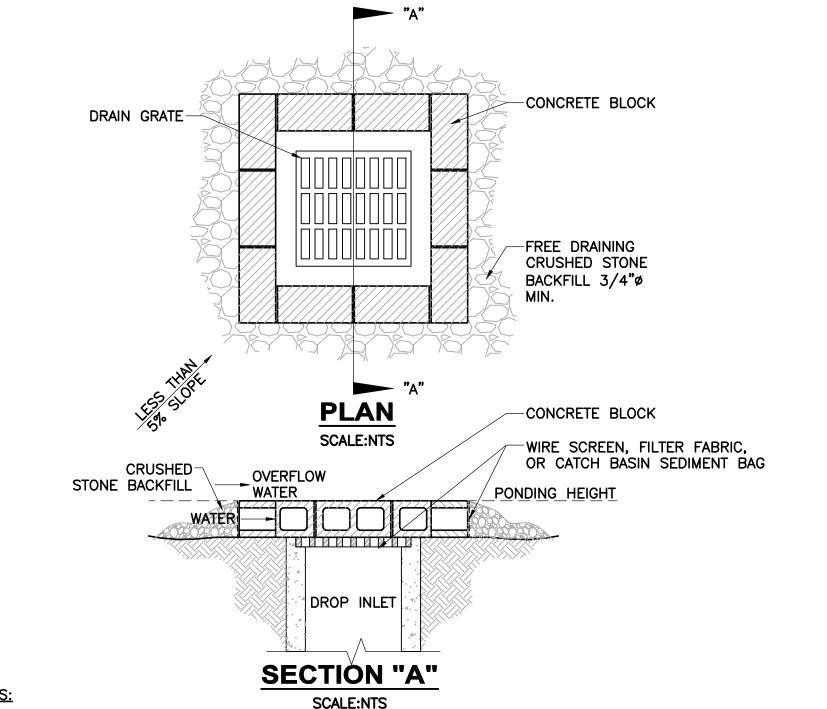
#### EROSION CONTROL - WETLAND NOTES

DISTURBED AREAS.

- 1. WETLANDS AND SURFACE WATERS (EXCEPTING THOSE WHICH ARE TO BE FILLED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS) WILL BE PROTECTED WITH SILT FENCE INSTALLED AT THE EDGE OF THE WETLAND OR THE BOUNDARY OF WETLAND DISTURBANCE.
- 2. IF THE WORK INCLUDES CROSSING OF WETLANDS AND/OR STREAMS, THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS WORKING IN THESE AREAS
- 3. ANY WETLAND CROSSING WORK SHALL BE COMPLETED BETWEEN THE PERIOD OF MAY 1 AND
- 4. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCING CONSTRUCTION WITHIN OR ADJACENT TO WETLAND AREAS.
- 5. WETLAND VEGETATIVE LAYERS SHALL BE REMOVED AND SALVAGED FOR RESTORATION OF THE

#### 7. SEEDING OF THE DISTURBED AREAS WITHIN WETLAND AREAS SHALL UTILIZE MIXTURES APPROPRIATE FOR WETLAND AREAS AS OUTLINED IN THE SPECIFICATIONS.

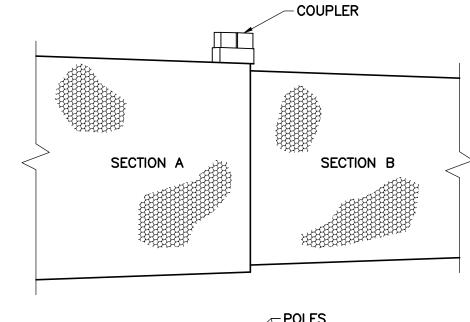




WOOD WASTE/BARK RUNOFF -FILL SLOPE - EXISTING GROUND

 $\sim$  see detail: "Joining silt fence sections"

8'-0"(MAX) 8'-0"(MAX)



WOOD POSTS

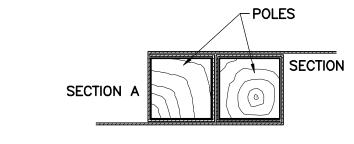
3'-0" WIDE REINFORCED

SILTATION FABRIC

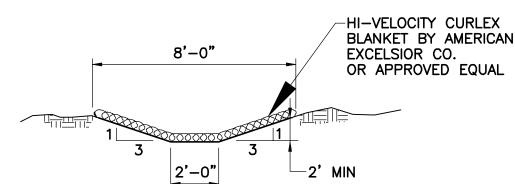
ATTACHED TO

WOOD POST

## **WOOD WASTE/BARK FILTER BERM**



## **JOINING SILT FENCE SECTIONS**



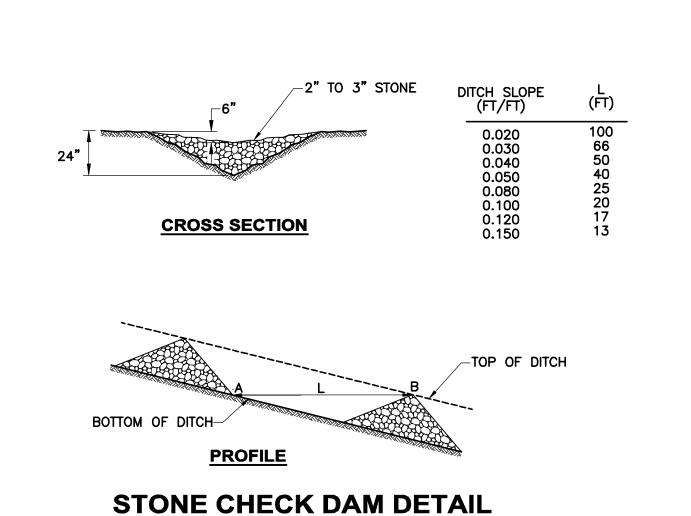
# **EROSION CONTROL MATTING - DITCHES**



PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF

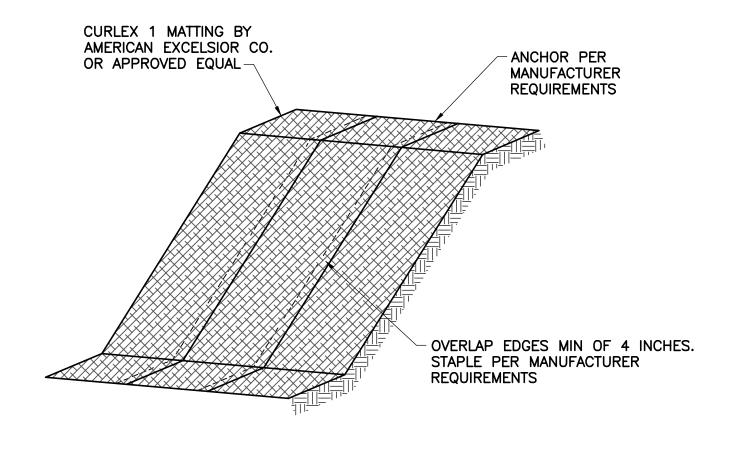
1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS(LESS THAN 3%).

3. THE TOP OF THE STRUCTURE, PONDING HEIGHT, MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO

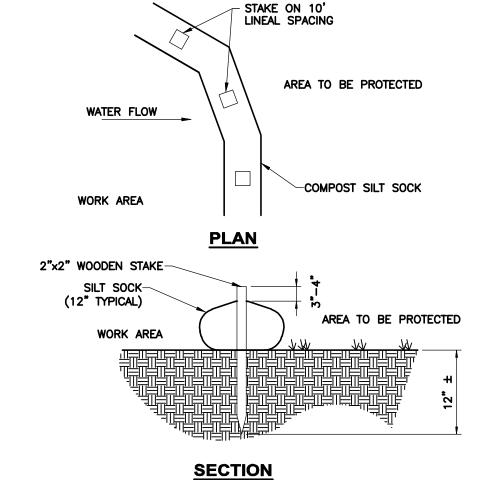


2. EXCAVATE A BASIN OF SUFFICIENT SIZE ADJACENT TO THE DROP INLET.

4. SILT BAGS MAY ALSO BE USED FOR CB GRATE INLET PROTECTION.



INSTALL ON SLOPES 3:1 OR GREATER **EROSION CONTROL MATTING - SLOPES** 



NOTES:

1. ALL MATERIAL TO MEET SPECIFICATIONS

- 2. SILT SOCK COMPOST/SOIL/ROCK/SEED FILL TO MEET APPLICATION
- 3. SILT SOCK DEPICTED IS FOR MINIMUM SLOPES. GREATER SLOPES MAY REQUIRE LARGER SOCKS PER THE ENGINEER
- 4. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY

#### **COMPOST SILT SOCK**

NTS

